

SECTION III—REMARKS

This amendment is submitted in response to the Office Action mailed December 13, 2005. Claims 13-20 are canceled and new claims 29-39 are added. Claims 29-39 remain pending in the application. Applicants respectfully request reconsideration of the application and allowance of all pending claims in view of the above amendments and the following remarks.

Specification Objections

The Examiner objected to the specification on two grounds. First, the Examiner objected to the abstract of the disclosure because the content includes implied phrases, such as “The invention . . .” at page 25, line 2. Applicants have replaced the existing abstract with an abstract whose content no longer include the implied phrases. Applicants respectfully submit that the new abstract overcomes the Examiner’s objection.

Second, the Examiner objected to the title as non-descriptive because it allegedly does not clearly indicate the invention to which the claims are directed. The Examiner suggested the title --A Process of Manufacturing an Oscillator --. Applicants thank the Examiner for his suggestion, but in view of the amendments to the claims Applicants have instead changed the title to --Process for Tuning an Oscillator--. Applicants believe this title more clearly describes the presently claimed subject matter, and respectfully submit that the amended title overcomes the Examiner’s objections.

Rejections Under 35 U.S.C. § 102

The Examiner rejected claims 13, 15, 16 and 18 as anticipated under 35 U.S.C. § 102(b) by U.S. Patent No. 4,131,484 to Caruso *et al.* (“Caruso”). As to claims 13, 15, 16 and 18, Applicants submit that the Examiner’s rejection is rendered moot by the

cancellation of these claims. As to new claims 29-39, Applicants respectfully traverse the Examiner's rejections. A claim is anticipated only if each and every element, as set forth in the claim, is found in a single prior-art reference. MPEP § 2131; *Verdegaal Bros. v. Union Oil of California*, 2 U.S.P.Q.2d 1051, 1053 (Fed. Cir. 1987). As explained below, *Caruso* cannot anticipate these claims because it does not disclose every element and limitation recited therein.

New claim 29 recites a process combination including providing an oscillator including "at least one pedestal formed on a substrate," a vibrating portion of the oscillator "supported by the at least one pedestal such that the vibrating portion is not in contact with the substrate," and "a plurality of spaced-apart stacks on one side of the vibrating portion." The process combination further includes determining a first resonant frequency of the oscillator member and adjusting the resonant frequency of the oscillator "by removing at least one of the plurality of spaced-apart stacks on the vibrating portion." *Caruso* does not disclose, teach or suggest a combination including the recited limitations. *Caruso* teaches that the resonant frequency of a quartz crystal wafer 16 sandwiched between a pair of metal electrodes 12 and 14 can be adjusted by drilling holes in the top electrode 12—in other words, by removing very small portions of the electrode. *Caruso* does not, however, disclose that "a plurality of spaced-apart stacks" are created on one side of the vibrating portion, and therefore it cannot disclose, teach or suggest adjusting the resonant frequency of the oscillator "by removing at least one of the plurality of spaced-apart stacks on the vibrating portion." Applicants submit that claim 34 is therefore in condition for allowance and respectfully request withdrawal of the rejection and allowance of the claim.

Regarding claims 30-33, if an independent claim is allowable, then any claim depending therefrom is also allowable. *See generally* MPEP § 2143.03; *In re Fine*, 837 F.2d 1071 (Fed. Cir. 1988). As discussed above, claim 29 is in condition for allowance. Applicants respectfully submit that claims 30-33 are therefore allowable by virtue of their dependence on an allowable independent claim, as well as by virtue of the features recited therein. Applicants therefore respectfully request withdrawal of the rejections and allowance of these claims.

New claim 34 recites a process combination including providing an oscillator that includes “at least one pedestal formed on a substrate,” a vibrating portion of the oscillator “supported by the at least one pedestal such that the vibrating portion is not in contact with the substrate,” determining a first resonant frequency of the oscillator, and adjusting the resonant frequency of the oscillator “by forming one or more structures on one side of the vibrating portion.” Caruso does not disclose, teach or suggest a combination including the recited limitations. Caruso teaches that the resonant frequency of a quartz crystal wafer 16 sandwiched between a pair of metal electrodes 12 and 14 can be adjusted by drilling holes in the top electrode 12. In other words, Caruso teaches that the resonant frequency should be adjusted only by removing material, not by adding material. Caruso therefore cannot disclose, teach or suggest a combination including adjusting the resonant frequency of the oscillator “by forming at least one structure on the vibrating portion.” Applicants submit that claim 34 is therefore in condition for allowance and respectfully request withdrawal of the rejection and allowance of the claim.

Regarding claims 35-39, if an independent claim is allowable, then any claim depending therefrom is also allowable. *See generally* MPEP § 2143.03; *In re Fine*, 837

F.2d 1071 (Fed. Cir. 1988). As discussed above, claim 34 is in condition for allowance. Applicants respectfully submit that claims 35-39 are therefore allowable by virtue of their dependence on an allowable independent claim, as well as by virtue of the features recited therein. Applicants therefore respectfully request withdrawal of the rejections and allowance of these claims.

Rejections Under 35 U.S.C. § 103

The Examiner rejected claim 17 under 35 U.S.C. § 103(a) as obvious in view of, and therefore unpatentable over, *Caruso* in view of U.S. Patent No. 4,051,582 to Eschler *et al.* (“*Eschler*”). As to claim 17, Applicants respectfully submit that the Examiner’s rejection is moot in view of the cancellation of the claim.

As to new claims 29-39, Applicants respectfully traverse the Examiner’s rejections. To establish a *prima facie* case of obviousness, three criteria must be met: (1) the prior art references must teach or suggest all the claim limitations; (2) some suggestion or motivation to combine the references must be found in the prior art; and (3) there must be a reasonable expectation of success. MPEP § 2143. As explained below, Applicants respectfully submit that the Examiner has not established a *prima facie* case of obviousness.

New claim 29 recites a process combination including providing an oscillator including “at least one pedestal formed on a substrate,” a vibrating portion of the oscillator “supported by the at least one pedestal such that the vibrating portion is not in contact with the substrate,” and “a plurality of spaced-apart stacks on one side of the vibrating portion.” The process combination further includes determining a first resonant frequency of the oscillator member and adjusting the resonant frequency of the oscillator

“by removing at least one of the plurality of spaced-apart stacks on the vibrating portion.” As discussed above, *Caruso* does not disclose that “a plurality of spaced-apart stacks” are created on one side of the vibrating portion, and therefore it cannot disclose, teach or suggest adjusting the resonant frequency of the oscillator “by removing at least one of the plurality of spaced-apart stacks on the vibrating portion.” *Eschler*, which the Examiner cites for its teaching of precipitating a vapor to form structures through vapor deposition, does not make up for the deficiencies of *Caruso*; *Caruso* and *Eschler* therefore cannot, when combined, obviate the claim. Applicants submit that claim 29 is therefore in condition for allowance and respectfully request withdrawal of the rejection and allowance of the claim.

Regarding claims 30-33, if an independent claim is non-obvious under 35 U.S.C. § 103, then any claim depending therefrom is also non-obvious. MPEP § 2143.03; *In re Fine*, 837 F.2d 1071 (Fed. Cir. 1988). As discussed above, claim 29 is in condition for allowance. Applicants respectfully submit that claims 30-33 are therefore allowable by virtue of their dependence on an allowable independent claim, as well as by virtue of the features recited therein. Applicants therefore respectfully request withdrawal of the rejections and allowance of these claims.

New claim 34 recites a process combination including providing an oscillator that includes “at least one pedestal formed on a substrate,” a vibrating portion of the oscillator “supported by the at least one pedestal such that the vibrating portion is not in contact with the substrate,” determining a first resonant frequency of the oscillator, and adjusting the resonant frequency of the oscillator “by forming one or more structures on one side of the vibrating portion.” By analogy to the discussion above for claim 29, *Caruso* and

Eschler cannot, when combined, obviate the claim. Applicants submit that claim 34 is therefore in condition for allowance and respectfully request withdrawal of the rejection and allowance of the claim.

Regarding claims 35-39, if an independent claim is non-obvious under 35 U.S.C. § 103, then any claim depending therefrom is also non-obvious. MPEP § 2143.03; *In re Fine*, 837 F.2d 1071 (Fed. Cir. 1988). As discussed above, claim 34 is in condition for allowance. Applicants respectfully submit that claims 35-39 are therefore allowable by virtue of their dependence on an allowable independent claim, as well as by virtue of the features recited therein. Applicants therefore respectfully request withdrawal of the rejections and allowance of these claims.

Conclusion

Given the above amendments and accompanying remarks, all claims pending in the application are in condition for allowance. If the undersigned attorney has overlooked a teaching in any of the cited references that is relevant to allowance of the claims, the Examiner is requested to specifically point out where such teaching may be found. Further, if there are any informalities or questions that can be addressed via telephone, the Examiner is encouraged to contact the undersigned attorney at (206) 292-8600.



Charge Deposit Account

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Respectfully submitted,

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Date: 3-13-06

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